

# Traffic Management Initiative (TMI) Interaction Reference Guide



The Traffic Management Initiative (TMI) tools were developed over the years with the understanding that there may be interactions between TMIs causing less than desirable results; some knowingly, some unknowingly. This quick reference document is designed to address the more commonly known TMI interactions.

The following TMI interactions are a quick reference guide, not a comprehensive list.

## **Airspace Flow Program running, Ground Delay Program issued after**

- Not exempting the AFP flights in an initial GDP
  - Demand in the AFP will be impacted by the demand distribution of the GDP
  - AFP needs to be revised due to the GDP(s) impact
  - Flights with EDCT from the AFP will be allocated slots in the GDP before the flights not previously controlled. (Q1 – Exemptions, Q2 – AFP flights, Q3 – Newly controlled flights)
- Exempting the AFP flights in an initial GDP
  - Minimal impact to AFP demand
  - AFP flights will retain the CTD as close as possible. CTA for the GDP will be calculated based on CTD+ETE
  - GDP flights fill in around the AFP controlled flights
  - Delays assigned not all issued by the GDP
  - Demand in the GDP may exceed the program rate due to the AFP exempt flights
- This interaction is only on the initial issuance of a GDP. Revisions to the GDP will not be influenced by the AFP activity.

## **Ground Delay Program followed by Airspace Flow Program**

- GDP demand distribution is known for AFP
  - GDP controlled flights are Excluded for delay assignment in an AFP, they are assigned ASLOT for demand allocation in the AFP
- AFP flights may receive increased delay due to GDP flights demand on the AFP
- GDP may be put out earlier than needed which could cause under delivery and extra workload
  - Increased number of EDCT in the system, not all with delays associated
- Airports with GDP, Flight Operators have an easier time maintaining connectivity between arrival/departure banks
  - Flight Operators can Sub based on airport program, not AFP(s).

## **Airspace Flow Program followed by Required Reroute (Not FCA defined reroute)**

- The interaction is based on a ETD/ETA reroute where the required route is through the AFP
- Flight previously routed around the AFP put into the AFP, Flight will receive a Pop-Up (DAS) delay assignment, and this can be a significant delay assignment.

- Flights with a DAS assigned delay are limited to being moved earlier in a subbing process, not later.
- Could move flights from one AFP to another AFP
- Increase in the demand through the AFP, may require revision of AFP or MIT on reroute

#### **Ground Delay Program followed by a Required Reroute**

- Reroute typically will increase the ETE; this increase does not cause a recalculation of the CTA or EDCT time. With no change to the EDCT, flights assigned to the Reroute arrive late for assigned ASLOT (CTA) in the GDP
- Shifting ETE causes demand to delay past the CTA, this may cause under delivery in one time period and excess demand in following time periods, program revision would be required to reallocate demand and EDCTs
- Increased demand on an arrival gate or enroute sector would be managed with MIT, adding delay to the rerouted flights and may create excess demand in following hours.

#### **Mile-In-Trail on a Ground Delay Program**

- Flights delayed to meet MIT land later than scheduled
- Close in flights may receive added delay due to meeting overhead stream volume/spacing requirements
- Program may push a spike of demand, this could develop into airborne holding and will increase delays on later flights when the GDP is revised

#### **Traffic Management Advisor (TMA) and Delay Programs (GDP, AFP)**

- TMA departure time is manually applied at the tower and supersedes Delay Program issued EDCT
- TMA assigned departure time is not feed into the TFMS. Delay Programs, FEA/FCA, Monitor Alert, have no knowledge of the additional delay providing inaccurate demand picture in TFMS
- Delay programs influence the TMA airborne delay assignments. This will impact the available slot assignments for TMA scheduled departures

The following references are not TMI interactions. They are references on what can be expected from the TMI and potential issues to the implementation choice.

#### **Ground Stop into Ground Delay Program**

- By Time +
  - Flights that are X-minutes from departure (Time + X) will be exempt from delay assignment in the GDP
  - Demand in the first hours of the GDP may exceed program rate due to the exemptions
- By Status
  - Only flights that are active or international are exempt in the GDP
  - Flights that are in taxi status or rolling down the runway may be assigned delay by the GDP
  - Recommended method for transitioning from a Ground Stop into a GDP
    - Provides proper ordering of the Ground Stopped flights in the slot allocation

**Early Ground Delay program on forecast**

- Predictability for customers to plan flight operations
- Missed capacity with bad forecast, difficult to generate tactical demand for available capacity
- TFMS sector demand predications reflect effects of EDCT

**Low rate/Zero Rate Ground Delay Program**

- Flights may encounter air borne holding or diversion
- Reactive revision of the program will increase program delays significantly
- Zero Rate may be to impactful pushing demand too far into the future
- Proactive issuance may cause loss of capacity if the forecast is inaccurate
- Proactive issuance allows flight operators EDCT to plan operation

**Multiple Ground Stops (rolling GS)**

- Customers do not know when they are going to depart
- Pushes demand causing greater need for GDP to recover demand
- NAS demand predictions are inaccurate
- Departure delays possible when recovering from backed up departure demand

**Diversion recovery in a GDP**

- Flights are not known to TFMS as recovery flights until the flight plan from the point of diversion to original destination is filed
- A recovery flight retains the assigned ASLOT (CTA) until the GDP is revised. This will ensure proper priority is provided to the recovery flight in ASLOT assignment
  - This could cause issue with delivery, there is not and EDCT for the tower to apply at the airport of diversion. Towers may have questions as to release times for the flights.

The choice of TMI(s) type and the order of issuance is part of managing the NAS. Each TMI has various implications depending on the order of implementation, available capacity, and forecasted impact to the NAS. Identification of the most constrained (or forecasted most constrained) NAS element is important to selecting and understanding how the TMIs will interact together.